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ACCESS TO AND FINANCING OF HEALTHCARE THROUGH HEALTH INSURANCE INTERVENTION IN INDIA

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Access to and Financing of Healthcare through Health Insurance Intervention in India

Shailender K. Hooda[*]

***[Abstract**: Health insurance is expected to promote equity in access to health, financial protection, reduce escalating healthcare cost, enhance provider networks and enable country to make an optimal use of limited resources through targeting, but empirical evidences on the issue are limited in India. This study evaluates the impact of health insurance on these issues using unit level records of two National Sample Survey 60th (2004-05) and 68th (2011-12) rounds data. The results show that health insurance promote equity in access to healthcare use but the likely impacts on the poorer segment of the society are very low and limited. Health insurance appears to encourage people to switch to costlier cares and to seek more care from expensive tertiary care providers, sidetracking primary care providers. This has resulted in both demand-sides as well as supply-sides moral hazard problems and in turn increases in the cost per inpatient episode of care in India. Impact of health insurance in providing the financial protection remained noticeable only for richer but limited on poorer and near poor. The role of private insurance companies, which promise to provide better service and health access, seems to be ineffective to achieve the stated objectives. Evidences show that the impact of health insurance on access to health would be effective if the provider networks fairly extensive spreading across regions and in failure, the likely impacts would be thinner. The study suggests that achieving universal health coverage through tax-financed systems or mix would be more cost-effectiveness than alone health insurance intervention model. However, effective implementation, people awareness about health insurance schemes and adequate regulation of private providers and insurers can enhance the likely impact of health insurance in India.]*

Keywords: Health Insurance, Financial Protection, Reimbursement, Rashtriya Swastha Bima Yojana, Costly Diseases, Moral Hazard.

1. Introduction

In the developing world, financial constraint is considered one of the major barrier of access to healthcare, particularly for poor and marginalized section of the society (Acharya, *et al*, 2012; Garg and Karna, 2009; Wagstaff and Doorslaer, 2003). Around 1.3 billion world's poor have no access to health services simply because they cannot afford to pay at the time of health emergency (Dror and Preker, *et al*, 2002) and if those do use services suffer financial hardship or even impoverishment (Xu *et al*, 2003; WHO, 2010). And many of them have to sale asset and / or borrow money, because they have to pay. For instance, in India, a high amount of healthcare expenditure (around 71%) is met out of the individuals' pocket. To meet the costs of healthcare around 40-45 per cent country's poor had to borrow / sell assets.

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This has resulted in inequitable access to healthcare, rural indebtedness and impoverishment (Berman *et al*, 2010; Ghosh, 2011; Selvaraj and Karan, 2012). Around one-fourth of Indians slip below the poverty line because of hospital stay (Peters *et al*, 2002). This calls for the introduction of universal health coverage (Mahal and Fan, 2011) or, at least, policies spreading health care costs more equitably across the population, improving access to health services and reducing households from falling below the poverty line due to catastrophic health care expenditure. Increased access to health care, based on need, can promote equity and achieve efficiency through a reduction in per capita health care costs (Routh, *et al*, 2004).

The universal health coverage is expected to make provisioning of health care equitable and sustainable in terms of efficient resource use and financing. But, the arguments on how to achieve universal health coverage differ considerably. The welfare theorists emphasised on the role of 'State' through a tax-financing system to provide universal healthcare services to its population. On the other side, insurance advocates argued that health insurance is a way to provide financial protection during health emergency, promote equity in access to health and reduces escalating health care cost, especially where carefully thought through financing arrangements have not been put in place. This also enables the optimal use of limited resources through targeting. The results of the impact of health insurance on access to health care use and financial protection however are mix.

The effect of health insurance turned positive on medical care use in developed world (Hadley, 2003) but little in developing countries. Escobar *et al* (2010) study reviewed that out of 39 developing countries studies, which have analyzed the impact of health insurance on access and use; about 28 have reported health insurance increases the access and use of health services. They argued that health insurance reduces the price of health care and thereby promotes access and use. Further, a review of 34 studies, of which 19 found methodologically strong, reported that there are some evidence that shows health insurance increases the health care utilization in terms of outpatient visits and hospitalization (Acharya A. *et al*, 2012). But these review studies concluded that health insurance 'so far has been unable to sufficiently fill financing gaps in health system and improvement in access to quality healthcare for the poor in low income countries' (Escobar *et al* 2010). And there were weak evidences that show health insurance reduced out-of-pocket health expenses, the effect on the poorest was even weaker than for the nearer poor (Acharya A., *et al*, 2012). The health insurance, rather than controlling household spending, appears to have raised the risk of high and catastrophic payment (Wagstaff and Lindelow, 2008; Wagstaff *et al*, 2009). Health insurance appears to encourage people to seek more care from the expensive tertiary care providers, sidetracking primary care provider in the process and leading to moral hazard problems in the country.

Thus, there is no uniform consensus in achieving the universal health coverage across countries. Some have maintained tax-financed strategy and some switched to health insurance model or mix to provide financial protection and improve access to healthcare (Wagstaff and Serra, 2007; Reddy S., *et al*, 2011). In India, with the launch of National Rural Health Mission (NRHM) in 2005, the overall policy debate has shifted from 'Health for All'

(tax-financed strategy) to 'Health for All with Financial Protection through Health Insurance' (mix strategy). Along with the promise of public spending about 2-3 per cent of GDP, the Government of India has launched Rashtriya Swastha Bima Yojana (RSBY) in 2008 with the aim to provide the financial protection to the poor, disadvantage and people working in informal sector. In addition, besides some old (public and private) health insurance schemes like Central Government Health Scheme (CGHS) and Employees State Insurance (ESI), which are accrued only to a privileged few and mostly to those employees working in the organized sector, there are some state-sponsored insurance schemes like Rajiv Aarogyasri, Yashaswini, Aarogyasri, Kalaignar, and Community Based Health Insurance also exist that provide financial protection to poor and informal communities (for detail see *Appendix 1*). Recent decision on the increase in Foreign Direct Investment (FDI) cap in health insurance from 26 per cent to 49 per cent in India, the role of other competitive medical and private health insurance companies, which promise to provide better services and health access, expected to grow.

These health insurance strategies aimed at improving the access to health care use, removing financial barriers to healthcare and protecting all citizens from catastrophic health expenditures, which currently arise due to user fees in public / private hospital and other direct payments like to purchase the medicine etc. These models independently facilitate health care treatment for different sets of population whereas levels of care differ. But, we believe that a comprehensive assessment about the impact of health insurance intervention in improving the access to healthcare and use and financing of healthcare on different population sub-groups is lacking in India and needs to be examined. This will help in generating evidences for better informed policy decisions for health insurance market and access to health care.

2. The Research Gaps

A considerable literatures have reported the impact of health insurance on access to health care and use, financial protection and out-of-pocket health expenditure cross countries (see Hadley, 2003; Escobar, *et al*, 2010; Wagstaff and Serra, 2007; Wagstaff *et al*, 2009; Reddy S *et al,* 2011; Selvaraj and Karan, 2012; Acharya, A. *et al*, 2012; Forgia and Nagpal, 2012). But, most of the studies either found weak in methodology (Acharya, A., *et al*, 2012), data limitation, inadequate sample coverage or lacking in framing the relevant questions (Escobar, *et al*, 2010). In Indian context, studies are lacking in addressing some research questions, like, (i) does health insurance has a positive impact on use of health services and for which services and why? Specifically, do health insurance induce primarily increases in the use of low cost-effective cares, services, diseases or, to the contrary, it increases high cost-effective cares, services, diseases or / and whether it increases the use of preventive or curative health services and leading to moral hazard problem (relating to underuse, waste or overuse of health services) in India. (ii) do people with health insurance have lower out-of-pocket expenditure than those who do not have the insurance; do uninsured people pay a higher proportion of their income for healthcare than the insured; does health insurance really benefiting the poor or do they experience different benefits compared to uninsured; (iii) when

out-of-pocket spending is the principal means of securing healthcare, then, do health emergencies result in people borrowing, selling assets and engaging in other coping mechanisms, and how does health insurance protect / provide financial protection to them (iv) when health insurance expected to act as purchasers of services from network of public, private or mix provider, then how does adequate provider network enable patient to take advantages of these services for affordable and / or accessible cares and unable them getting likely benefit if provider network is not fairly extensive; and does health insurance generate more demand for (private) healthcare and provide an opportunity for private sector to grow. With the examination of these questions of access to and financing of healthcare through health insurance intervention, the study tries to understand the health insurance for whom, for what and why. Based on the findings, the study goes on to discuss the comparison of different healthcare models particularly 'Health for All' and 'Health for All with Financial Protection' for better policy perspective.

3. Objectives

The aim of this study is to contribute to current policy debate on scaling up health insurance in a country like India by shedding light on issues whether health insurance help in improving the access and use of health services, reducing out-of-pocket spending and providing financial protection particularly the poor / needy and in promoting private healthcare provider market in India. The specific objectives of the study are as follow:

- To examine the impact of health insurance on equity and access to healthcare use and health spending
- To examine the impact of health insurance in providing financial risk protection to needy population, reducing overall inpatient spending and burden of borrowing.
- To study the two way causation between health insurance and healthcare providers market in India.

4. Data and Methods

This exercise is largely based on unit level records of National Sample Survey (NSS) 60th (Morbidity and Health Care)—a comprehensive health round, which involve period of 2004-05. This is used to work out the information on access to health care use from different services, expenditure for inpatient / outpatient cares, different treatments and diseases for both insured and uninsured persons. The financial aspects like premium paid by households, household's sources of healthcare financing (like, income / saving, borrowing, sale of asset, contribution from friends / relatives, etc.), role of employers (public-private employers) and non-employers (medical insurance companies and other agencies) insurers in receiving premium, making reimbursement and health finance easy are also captured.

It is important to highlight that this round was conducted in 2004-05 and therefore unable to capture the impact of newly launched pro-poor publically financed (central and state run)

health insurance schemes. To capture the impact of these pro-poor financing strategies became important for better policy perspective. To capture their impact on healthcare access and use, the most recent NSS 68th Consumption Expenditure Survey (CES) round (2011-12) is used. This round however provides limited information on medical (institutional and non-institutional) expenses across different population sub-groups, across districts, rural-urban residents and states. Therefore, examining the impact of newly launched health insurance schemes using CES round is not straightforward. In order to capture the impact of health insurance from this round, we followed the case-control approach, adopted in Selvaraj and Karan (2012) study published in Economic Political Weekly by modified it in more holistic way. Their study identified the number of districts across states of India that have rolled out centrally (RSBY) and state run health insurance scheme / programmes (called intervention districts) and those that did not (called non-intervention districts) and examined the impact of health insurance in intervention and non-intervention districts on household out-of-pocket expenditure by using NSS (2009-10) 66th CES round data.

To make the case-control approach more effective, we analyzed the district level profile of RSBY enrolment. The RSBY, launched in April, 2008, in some selected districts in 22 Indian states and expected to cover all districts and states of India with an objective to cover the below poverty line families (identified by states) under the RSBY umbrella. A details analysis (*Appendix 2*) shows that though the scheme has been rolled out in most of the districts in the year 2012 but the enrolment ratio (enrolled families to targeted families) recorded very low in many districts. We believe that merely rolling out of health insurance scheme will have little / negligible impact if the targeted families would have not been enrolled. Thus, rather than intervention and non-intervention districts, examining the impact of such health insurance programmes in high insurance enrolment and low / no health insurance enrolment districts / areas can give more robust result and fair idea of insightful policy perspective. Second, we believe that the 2009-10 CES round data will have little to say about the impact of health insurance as it was just one year ahead of RSBY (April, 2008) launched year. The effectiveness of any policy initiatives take time (time lag between rolling out, implementation and outcomes) to show the results. To arrive at more meaningful policy analysis, we used most recent CES (2011-12) round data.

Under the case-control approach, we have grouped all the NSS districts into two categories. That is, districts with high (higher than average) RSBY enrolment ratio as well as all districts of Andhra Pradesh and Tamil Nadu states where RSBY however not implemented but state-run insurance schemes working effectively and districts with no / low (less than average) enrolment ratio. Out of total NSS districts about 301 districts show high RSBY enrolment ratio. These districts are called high health insurance coverage (HHIC) districts / areas in the study and rest are low health insurance coverage (LHIC) districts / areas.

It is important to note that 2004-05 health and 2011-12 CES round in any way are not comparable. The purpose of using these two data sets is to capture the impact of newly launched public financed health insurance schemes (from 2011-12 data) as well as existing government / private, medical insurance companies and other agencies (from 2004-05 data).

As indicated, the 2011-12 data have limited information on health indicators and therefore is used to see the impact of publically financed health insurance on access to healthcare in high and low coverage areas / districts across economic stratum sub-groups. The economic stratum in quintiles is identified using monthly per capita consumption expenditure (MPCE). From this round, the information on hospitalization (institutional) expenditure for 365 days and households that have reported expenditure in this category is utilized by using schedule Type-1 with mixed recall period (MRP). To answer the other research questions, mentioned above, the detail health round (2004-05) data is used. This round provides information about the number of household / persons paid any insurance premium. Based on the information, the insured and uninsured persons are identified[1].

From this round, data is analysed for inpatient care (during last 365 days), outpatient care (ailment during last 15 days), treatments seeking behaviour for services like hospital staffs / specialists / attendants, medicine, bed, diagnostic tests etc., and low and high cost diseases like, gastro-intestinal, heart disease, hypertension, respiratory including ear / nose / throat ailments, tuberculosis, bronchial asthma, disorders of joints and bones, diseases of kidney / urinary system, prostatic disorders, gynaecological disorders, neurological disorders, psychiatric disorders, eye ailment, diseases of skin, goitre, diabetes mellitus, under-nutrition, anaemia, sexually transmitted diseases, febrile illnesses, tetanus, filariasis / elephantiasis, disabilities, diseases of mouth / teeth / gum, accidents / injuries / burns / fractures / poisoning, cancer and other tumours, other diagnosed ailments, other undiagnosed ailments etc. for inpatient care. The inpatient rate is shown per 1,00,000 population. The equity in health access and use is shown by Lorenz curve. This analysis helps us to identify whether people with health insurance have lower out-of-pocket expenditure than those who do not have the insurance and for which type of diseases / treatment and whether health insurance really benefiting the poor, does there exist moral hazard problem in India.

The impact of health insurance on financial protection or making health finance easy is examined by studying the role of insurance in reducing inpatient spending and burden of borrowing. In this process, the relative role of insurers in making reimbursement and collecting premium from different population sub-groups is also examined. To make a comparison between tax-financing system and financing strategy through health insurance a

[1] A closer examination of NSS 2004-05 unit level data shows that some people have paid premium in rupees term, but in some cases the amount paid is zero. This means they are either having free insurance policy from employers or others. If the reporting of premium paid of a household is in numeric (including zero) value then they are considered insured persons (around 24 percent persons of total population found in this category) and other are considered uninsured. In India the Department of Textiles, Defense and Railways do not collect any contribution but provide health services to its employees. They provide medical coverage through a network of facilities departmentally owned and operated for their employees and dependents (Forgia and Nagpal, 2012). Some of the social, community, NGOs and state run health insurance also do not charge the premium. Therefore, the reporting of zero premiums paid is noticeable high in the data (*Appendix 2*) and they are also getting reimbursement facility.

nexus or two ways causation between health insurance and healthcare provider network is analyzed. One argument is that if provider networks are uneven and low, the less the estimated effects of health insurance are likely to be. On the contrary, as per pro-insurance school of thought, covering population under health insurance will encourage them to seek more care / demand and consequently help in developing the private (as well as public) healthcare provider network in the country. Which phenomenon is stronger is examined by studying the tendency of insured person to utilize different health services, reasons for not taking treatment from government facility, if any, their utilization status in low and high health infrastructure districts / area. For the purpose, a health infrastructure index is constructed for all NSS districts of India separately using information on number of SCs, PHCs, CHC, Sub-divisional district hospital, civil hospital, empanelled (under RSBY) private hospitals per 1,000 population of the district. The Principal Component Analysis (PCA) method is applied to construct the index. All districts are divided into two low and high health infrastructure areas / districts and then the impact is analyzed. To make the case more strong, whether health insurance promote provider network, a functional association between population coverage under insurance in a state and index of health infrastructure (discussed earlier), controlling for level of development of the state, is examined.

5. Implementation Status of Health Insurance Schemes in India

The phenomena of providing financial protection through health insurance in India are not so new. After independence, India has initiated Employees State Insurance (ESI) in 1952 and Central Government Health Scheme (CGHS) in 1954, accrued only to a privileged few and mostly to employees. To provide the financial protection to the poor, disadvantage and people working in informal sector, the Ministry of Labour and Employment, Government of India, launched Rashtriya Swastha Bima Yojana (RSBY) health insurance scheme in April 2008. In addition, some state-sponsored insurance schemes like Yashaswini Co-operative Farmers Health Healthcare Scheme (2003) and Vajpayee Aarogyasri scheme (2009) in Karnataka, Rajiv Aarogyasri (2007) in Andhra Pradesh, Kalaignar's Insurance Scheme (2009) recently called Tamil Nadu Insurance Scheme for Life Saving Treatment 2011 in Tamil Nadu, RSBY plus (2010) in Himachal Pradesh, Apka Swasthya Bima Yojana (2011) in Delhi and other Community Based Health Insurance schemes are exist with the aim to provide financial protection to poor and informal communities (*Appendix 1*). There are private competitive medical and health insurance companies that promise to provide better services and health access. The role of private health insurance companies[2] expected to grow with the recent decision of government of India to increase the Foreign Direct Investment (FDI) cap in insurance from 26 per cent to 49 per cent in 2013.

[2] The National Insurance Company, New India Assurance, United India Insurance, ICICI Lombard, Tata AIG, Royal Sundaram, Star Allied Health Insurance, Cholamandalam DBS, Bajaj Allianz Apollo, AG Health Insurance Company, etc. are considered as major health insurance companies by Insurance Regulatory Development Authority (IRDA) of India.

As far as the coverage of these schemes is concerned, around 55.4 million, 3 million, 70 million and 110.8 million beneficiaries registered under ESIS, CGHS, RSBY and State run health insurance scheme respectively, total of around 239.2 million in 2010 (*Appendix 1*). All these schemes collect some premium from beneficiaries to provide health benefit. The Ministry of Textile, Railway and Defence as well as some co-operative society insurance scheme provide health access without collecting contributions from the beneficiaries. Our estimates, using NSS 60th Round, show that in 2004-05 around 229 million people were protected with either public, private or other type of health insurance schemes. That is, around 24 per cent of total sampled population covered under health insurance at the aggregate level. This coverage is around 19 per cent among poorest (lowest 20% expenditure quintile), 30 per cent richest, 22 per cent rural and 27.8 per cent urban (*Appendix 2*).

The benefit packages of ESIS and CGHS are comprehensive in nature. They cover inpatient as well as outpatient care treatment expenses, while most of the centre as well as state run health insurance schemes in most cases limited to inpatient care benefit. The amount of insurance coverage also varies considerably ranging from ₹30,000 (under RSBY) to ₹2,00,000 (Yeshasvini) and unlimited under ESIS / CGHS. Under RSBY, the centre government finances 75 per cent of the premium and the state about 25 per cent, with a nominal registration fee of 30 rupees required from eligible households (*Appendix 1*).

In 2010, around 23.4 million families (constituted 70 million beneficiaries) enrolled under RSBY, but number of enrolment increased to around 35.9 million families (constituted 179 million beneficiaries) as on October, 2013 (*Appendix 2*). The population enrolment under RSBY however shows increasing trends but enrolment remained lower (about 49.6%) than the targeted families which country need to cover under the RSBY umbrella (*Appendix 2*). The enrolment to targeted families ratio varies considerably across states and across districts within a state. The enrolment ratio recorded higher than the national average ratio in states like, Andhra Pradesh, Kerala, Himachal Pradesh, Orissa, Tripura, Pondicherry, West Bengal, Maharashtra, Manipur, Bihar and Jammu & Kashmir compare to others. The other details relating to financing, subsidy, beneficiary, coverage, delivery, etc. are summarized in *Appendix 1*.

6. Access & Equity in Healthcare Use: Role of Health Insurance Intervention

The access to health care use is shown by rate of hospitalization per 1,00,000 population for inpatient care during stay at hospital during last 365 days and for outpatient care. The NSS 60th round data analysis shows that the rate of hospitalization per 1,00,000 population is recorded around 2,400 persons in India. There exist significant differences in the rate of hospitalization across rural-urban residents. The rate of hospitalization is recorded clearly high in urban area, about 2,975 persons, compared to rural about 2,204 persons (*Table 1*).

Probably, the greater accessibility, in terms of proximity to health care institutions (both public and private)[3], in urban areas is an important determinant of health facility use.

Table 1
Rate of hospitalization and ailments among insured-uninsured persons: 2004-05

	Insured			*Uninsured*			*Combined*		
	Rural	*Urban*	*Total*	*Rural*	*Urban*	*Total*	*Rural*	*Urban*	*Total*
Inpatient Care: Hospitalization during last 365 days									
Poor	1824	2298	1852	1369	2190	1420	1454	2209	1501
Second Poor	2312	2811	2390	1833	2209	1894	1945	2345	2010
Middle	2698	2697	2698	2622	2905	2688	2642	2851	2691
Second Rich	3512	3163	3355	3499	3026	3311	3502	3066	3323
Rich	4644	3767	3975	5120	3250	3793	4995	3415	3848
Total	**2523**	**3268**	**2743**	**2111**	**2862**	**2292**	**2204**	**2975**	**2400**
Outpatient Care: Ailments during last 15 days									
Poor	5339	7531	5467	6878	7531	6919	6589	7531	6648
Second Poor	6997	7296	7044	8964	8620	8907	8502	8322	8473
Middle	7131	7538	7224	10480	8956	10121	9587	8588	9354
Second Rich	10258	8556	9491	13152	9946	11875	12426	9538	11235
Rich	13286	10887	11455	17731	12529	14038	16559	12003	13251
Total	**7304**	**9177**	**7858**	**9267**	**10244**	**9503**	**8824**	**9947**	**9110**

Note: The rate of reporting of hospitalization and ailment for combined, insured and uninsured persons is estimated per 1,00,000 populations separately.
Source: Unit Level Records of NSS 60th Round

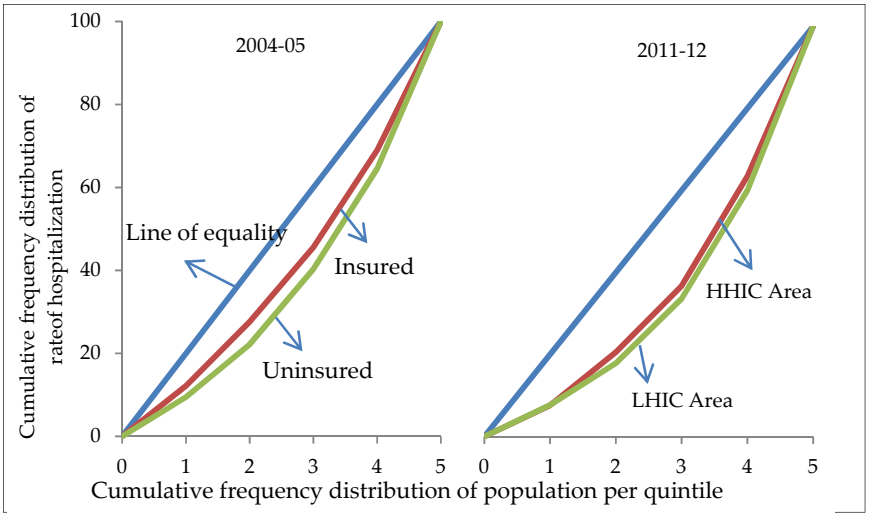
The rate of hospitalization / inpatient care is reported low among poor segment of the society compare to the richer. The rate of hospitalization shows rising trends with the level of living. That is, the rate of hospitalization is positively associated with MPCE quintiles at the aggregate level and in both rural and urban areas. The rate of hospitalization recorded around more than double amongst richest (top 20% population), about 3,848 persons per 1,00,000 persons, compare to poor (bottom 20% population) about 1,501 persons (*Table 1*). These findings are similar to previous studies of a positive association between per capita expenditure / income status and hospitalization rates (Mahal, *et al*, 2002; MoHFW, 2007). The difference in rate of hospitalization between rich and poor is around less than double in

[3] Health Information of India reported that in 2001, in rural area where nearly 70 percent of Indian population is residing, only 19 percent of hospital beds (public and private) are located and rest are with urban area. High availability of health infrastructure facilities leads to high access to healthcare use (Hooda S. K., 2011).

urban area, whereas more than three times in rural area. As regards to the low rate of hospitalization amongst the poor, either the poor are less prone to hospitalization than the rich, or that the reporting of hospitalization improves with improvement in the level of living or the proximity of health institutions. Of these three postulations, the last two seems to be the more plausible.

As far as the role of health insurance in access to healthcare utilization, the study finds that the rate of reporting for hospitalization of insured person found high (about 2,743 persons per 1,00,000 insured population) than the uninsured (about 2,292 per 1,00,000 uninsured population) in 2004-05. Similar to the general trend, the rate of hospitalization show increasing trend with the level of living / income both amongst the insured and uninsured across rural-urban residents. In rural area, the rate of hospitalization of rich insured person found higher (about 4,644) than poor insured (about 1,824). For uninsured person, this rate is recorded around 1,869 and 5,120 respectively (*Table 1*). Interestingly, in rural area, rich-poor gaps in access to inpatient care use among insured found lower than rich-poor gap of uninsured (*Figure 1*). These trends however are less likely in urban area.

Figure 1
Equity in access to healthcare use in rural area: The role of health insurance



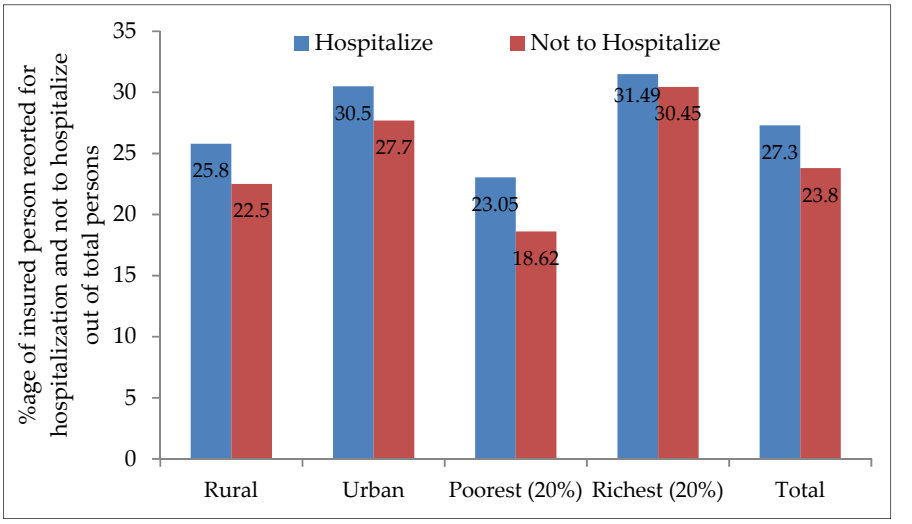
Source: Unit level records of NSS 60th and 68th rounds

Achieving equity in access to healthcare however remained an important goal in the health sector across country. It is recognized that the poor generally use health services less, despite having higher levels of need, than do the better-off. The data analysis shows that the health insurance enables to ensure high access with greater equity in health care utilization in India. The Lorenz Curve of healthcare use for insured person found nearer to the equality line than the uninsured rural residents. Among insured rural residents, this curve found nearer to equality line for people living in high health insurance coverage (HHIC) area than the LHIC

area (*Figure 1*). The impact of health insurance in insuring the equity in access to health care seems to be high in rural area than urban.

The insured persons however have high access of inpatient care use than uninsured but their status of utilization for outpatient (rate of ailment during last 15 days) care found lower than the uninsured. Health insurance intervention seems to be less influential in case of outpatient care. One reason could be that health insurance in most cases meant for inpatient care, while benefit coverages for outpatient care are limited in India. Because of this, the insured person probably sidetracking primary care usages and waits and watch for hospital admission to get benefit of health insurance. This can be justified by studying the reporting behaviour of insured persons for inpatient care. The reporting behaviour / tendency of insured person like 'to hospitalize' and 'not to hospitalize' shows that percentage of insured persons hospitalized found high person (about 27.3%) than 'not to hospitalization' (about 23.8%) across rural-urban residents in India (*Figure 2*). This indicates that entitlement of health insurance increases the probability to report for hospital care rather than 'not to hospitalize'. Interestingly, the reporting percentage for hospitalization among poor insured persons is high (about 23.1%) than 'not to hospitalize' behaviour (about 18.6%). That is, health insurance plays a greater role in influencing the tendency of hospitalization. Therefore, it is not surprising that inpatient rate of insured person is high.

Figure 2
Tendency of reporting for hospitalization among insured person in India (in %)



Source: Unit level records of NSS 60th round

The impact of recently initiated publically financed (centre and states) health insurance schemes, aimed to provide the financial protection to poor segment of the society, is estimated using 2011-12 data. The results shows that the impact of these health insurance schemes on poorer segment of the society are positive. That is, the rate of reporting for

hospitalization of poorest population living in high health insurance coverage (HHIC) area is significantly high (about 1,817 people per 1,00,000 population) than the poor those living in LHIC area (about 1,662). In high health insurance coverage area, the rate of reporting for hospitalization of poorer segment of the society recorded high across rural-urban residents. This rate found low in LHIC area. The hospitalization rate also found high at aggregate level (about 3,416 people per 1,00,000 population) around 4,014 in urban and 3,194 in rural in HHIC area compare to (around 3,041; 3,343 and 2,898 respectively) in LHIC area (*Table 2*).

Table 2
Rate of hospitalization in low-high health insurance coverage area: 2011-12

	HHIC Area			*LHIC Area*			*Combined*		
	Rural	*Urban*	*Total*	*Rural*	*Urban*	*Total*	*Rural*	*Urban*	*Total*
Poor	1798	1978	1817	1689	1442	1662	1746	1714	1742
Second Poor	3075	2541	2969	2242	2173	2229	2630	2347	2574
Middle	3817	3140	3615	3454	2654	3196	3621	2865	3386
Second Rich	6347	4586	5521	5813	3623	4689	6066	4038	5066
Rich	8643	6181	6967	8793	4968	5958	8718	5489	6412
Total	**3194**	**4014**	**3416**	**2898**	**3343**	**3041**	**3043**	**3630**	**3220**

Source: Unit level records of NSS 68th round

The rate of reporting for hospitalization shows increasing trends with the level of living in both LHIC and HHIC area across rural-urban residents (*Table 2*). The important policy lesson that we can draw from this discussion is that with the coverage of all BPL families under the umbrella of publically financed health insurance schemes, the rate of hospitalization, particularly amongst the poor, will increase. Thus enrolment of poor population (which is around 49.9% under RSBY) under publically financed health insurance schemes is the prerequisite to increase the access to healthcare usage for inpatient care in India.

7. Health Insurance and Out-Of-Pocket Spending in India

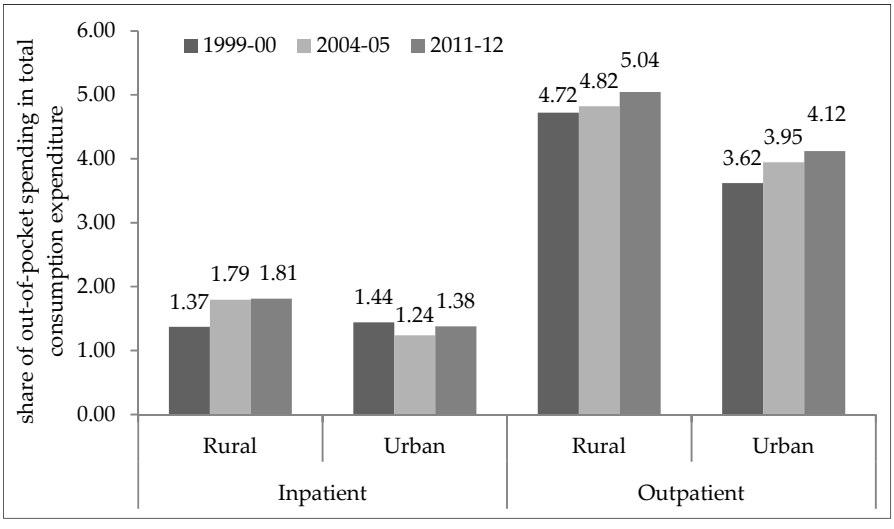
7.1 General Trends

In general, the share of household's out-of-pocket (OOP) spending in total consumption expenditure of the household shows increasing trends between the different NSS rounds, from 1999-00 to 2011-12. The increasing trends are more pronounced in rural area, while in urban area, the OOP spending shows declining trends for inpatient care but increasing trends for outpatient care (*Figure 3*).

The average per cases inpatient care spending of insured persons recorded comparatively higher than the average spending of uninsured at aggregate level and in both rural-urban areas in 2004-05 (*Table 3*). The health expenditure shows increasing trends with the level of

living in general and both amongst the insured and uninsured persons across the rural-urban residents. Interestingly, the poor insured persons have comparatively low average per cases inpatient spending than the poor uninsured, while average inpatient spending of rich insured is higher than the rich uninsured. The rate of increase in inpatient spending with the level of living is also high among insured than the uninsured. This could be because, either the health insurance has helped in reducing the health care cost amongst the poor insured persons or the benefits received by the poor from health insurance are limited. The second plausible argument seems to be stronger. Overall, the health insurance rather than reducing the cost of care increases the cost of inpatient care.

Figure 3
Trends in the share of out-of-pocket spending in total consumption expenditure: 1999-2000 to 2011-2012



Source: NSS published reports, select years

Table 3
Average inpatient care spending of insured and uninsured person: 2004-05

	Insured Persons			*Uninsured Persons*		
	Rural	*Urban*	*Total*	*Rural*	*Urban*	*Total*
Poor	3,499	2,467	3,423	4,092	3,972	4,080
Second Poor	4,210	3,510	4,088	4,906	5,291	4,978
Middle	5,403	3,757	5,025	5,270	4,327	5,035
Second Rich	7,114	6,484	6,855	6,884	8,021	7,299
Rich	13,749	14,430	14,233	8,189	12,200	10,531
Total	**5,860**	**9,580**	**7,150**	**5,572**	**8,466**	**6,417**

Note: Medical expenditure per hospitalisation case during stay at hospital as inpatient for last 365 days in rupees

Source: Unit level records of NSS 60th round

The NSS 68th round (2011-12) data analysis also shows similar trends. That is, the average medical expenditure per hospitalization recorded high in high health insurance coverage (HHIC) area compare to the LHIC area across rural-urban residents (*Table 4*). The inpatient spending of richer people again recorded high in HHIC areas compare to LHIC areas. These trends however are not reflected for poorer. This shows that there is hardly any difference in inpatient spending in low and high health insurance coverage area for poorer and near poor segments. The publically financed health insurance schemes however are pro-poor financing strategies, having both with cash and cashless health facilities, but their impact on poorer segment of the society are low.

Table 4
Average inpatient care spending of high and low insurance coverage area: 2011-12

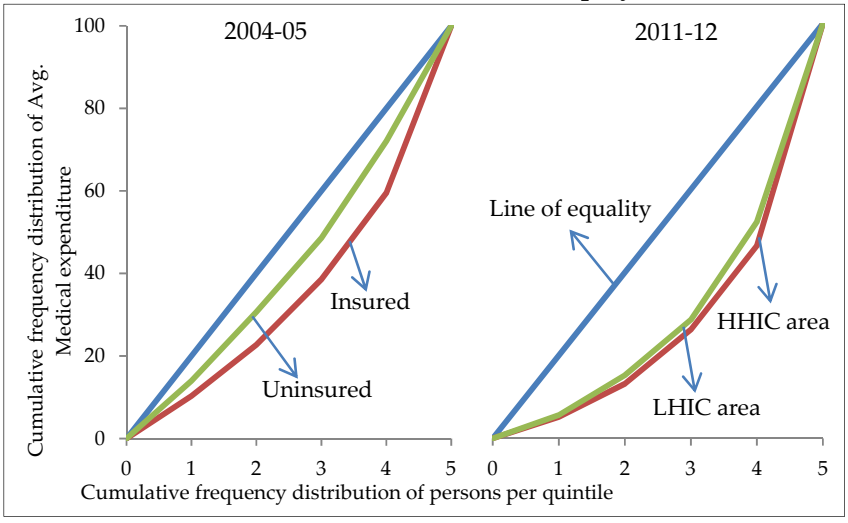
	HHIC Area			*LHIC Area*		
	Rural	*Urban*	*Total*	*Rural*	*Urban*	*Total*
Poor	2,460	2,500	2,465	2,439	2,592	2,453
Second Poor	3,793	4,127	3,851	4,151	3,342	3,999
Middle	6,197	5,174	5,931	5,776	4,720	5,495
Second Rich	9,586	7,069	8,606	10,214	7,910	9,300
Rich	25,431	19,908	22,095	20,702	17,277	18,585
Total	**7,690**	**11,336**	**8,829**	**7,523**	**10,618**	**8,534**

Note: Medical expenditure per hospitalisation case during stay at hospital as inpatient for last 365 days in rupees

Source: Unit level records of NSS 68th round

On average, per cases inpatient care spending in India show increasing trends with the level of living. The increasing trends in inpatient spending however more pronounced among insured person and people living in HHIC area compare to their counterparts. That is, the rate of increase in inpatient spending with the level of living among insured. This has resulted in inequitable access to healthcare in India. The Lorenz curve of medical expenditure for insured persons and people living in HHIC area recorded far away from equality line as comparison to the uninsured and for people living in LHIC area (*Figure 4*). This is because, the rich insured person have a tendency to prefer costly cares, sidetracking basic treatment, in this process their inpatient spending increasing and resulted in inequitable access to health care.

Figure 4
Health insurance and medical expenditure in rural India: The issue of distribution and equity



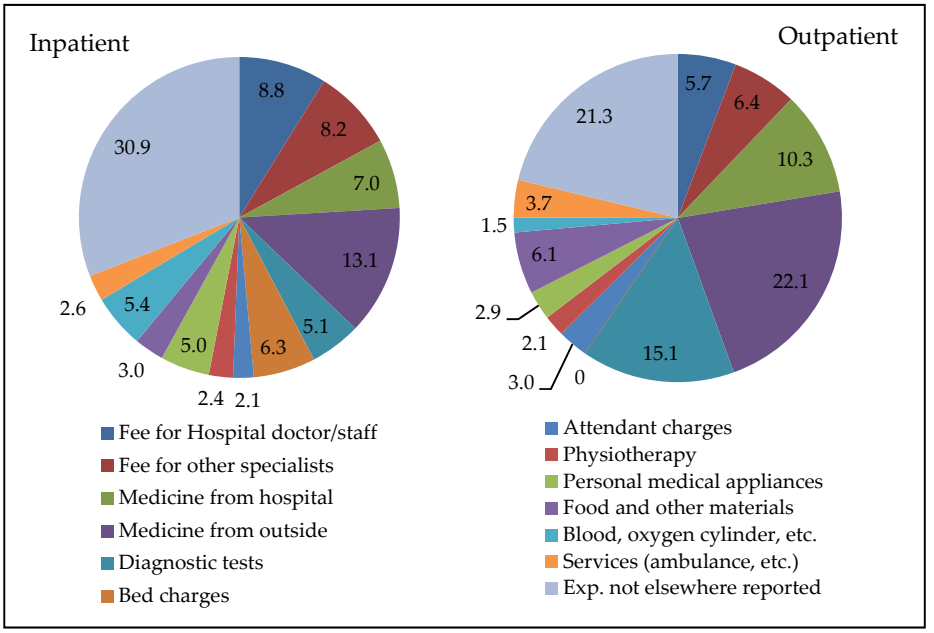
Source: Unit Level Records of NSS 60th & 68th Round

7.2 Trends by Nature of Treatments and Diseases

Whether health insurance induce primarily increases in the use of low cost-effective treatments and diseases or, to the contrary, it increases high cost-effective treatments / diseases and have resulted in any problem related to moral hazard is examined by studying the pattern of health spending by nature of treatments and diseases of insured and uninsured persons using 2004-05 data. In general, out of different care of treatments, a major share of average health expenditure is spent to purchase medicine from inside and outside the hospital for inpatient and outpatient care in India (*Figure 5*). Of which, share of spending to purchase medicine from outside hospital is higher than that the share of inside medicine for both the cares (inpatient and outpatient). Further, the share of average inpatient spending to avail doctors / specialists / health staffs is the second major component of spending, while for outpatient care, the diagnostic tests constitute higher share.

In general, the share of inpatient spending on medicine was recorded high, while for insured person, the compositional share of spending on outside medicine, doctors / specialists / staffs fee found high. Followed by, share of spending of insured person on medicine from hospital, bed charges and blood / oxygen cylinder found high (*Table 5*). The share of inpatient spending of uninsured person on these components found lower than insured. The compositional distribution of inpatient spending on these components shows similar trend for rural-urban. The poor uninsured person spend high per cases share to purchase medicine from outside hospital, while poor insured spend low. This indicates that poor insured person have access to medicine from inside hospital than the uninsured rich. In case of rich (both

Figure 5
Distribution of OOP spending by nature of treatments: General trends for 2004-05



Source: Unit level records of NSS 60th round

Table 5
Compositional distribution of medical expenditure during stay at hospital by nature of treatments (%)

	Insured					*Uninsured*				
	Rural	*Urban*	*Poorest*	*Richest*	*Total*	*Rural*	*Urban*	*Poorest*	*Richest*	*Total*
Doctor / staff Fee	8.2	9.3	8.4	9.3	8.5	7.0	9.2	6.1	8.4	7.9
Specialists Fee	7.9	8.1	8.2	9.2	7.9	6.7	7.8	6.7	8.1	7.1
Hospital Medicine	6.8	5.9	7.3	6.3	6.4	5.3	5.5	4.8	6.0	5.3
Outside Medicine	14.5	11.5	17.7	10.4	13.3	14.4	12.2	21.0	9.7	13.4
Diagnostic tests	5.4	4.6	4.7	5.1	5.1	5.6	4.3	4.6	5.2	5.0
Bed charges	5.8	5.7	5.9	5.3	5.7	4.0	5.3	4.7	4.6	4.6
Attendant charges	1.9	1.5	1.6	1.6	1.7	1.0	1.4	1.3	1.4	1.2
Physiotherapy	3.4	2.9	2.8	5.2	3.1	6.2	2.5	3.6	8.9	4.7
Medical appls	5.2	4.2	2.2	5.3	4.8	4.4	4.4	1.4	6.8	4.4
Food	3.2	2.4	3.8	2.0	2.9	2.9	2.0	3.6	1.6	2.5
Blood & oxygen	5.5	4.4	7.2	4.2	5.0	4.1	3.9	7.0	3.9	4.0
Ambulance serv.	3.1	2.4	3.1	2.4	2.8	4.6	2.1	2.0	1.9	3.5
Unreported exp	29.3	37.1	27.0	33.7	32.6	33.8	39.3	33.4	33.5	36.3
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Note: Poorest and richest are bottom and top 20 MPCE quintile population respectively.
Source: Unit level records of NSS 60th round.

insured and uninsured), such trends seem to be reverse (*Table 5*). Overall analysis reflects that insured person have a tendency to access more tertiary care than the uninsured person.

The pattern of average inpatient spending of insured and uninsured persons by nature of disease provides much better explanation to identify expenditure for what and which services / disease. This helps in identifying whether person switch to costlier care when protected with health insurance. The NSS 2004-05 data provides information of health care expenditure on around 40 diseases ranging from heart diseases to kidney and fevers, etc. (*Table 6*). The compositional share of average inpatient spending (medical expenditure during stay at hospital) on these diseases differ significantly across insured and uninsured persons, poor-rich and rural-urban residents. There is high variation in the composition share of inpatient spending of insured and uninsured person on high-cost-disease as well as on low-cost-diseases. The share of average inpatient spending of insured persons found high on high cost disease like heart disease, disease of kidney / urinary system, sexually transmitted diseases, cancer and other tumours, prostatic disorders and tetanus, while share of spending of uninsured persons on these components found low. The share of inpatient spending of uninsured person found high on diseases like, hypertension, tuberculosis, gynaecological and neurological disorders and diabetes mellitus compare to the share of spending of insured persons (*Table 6*).

Rich and urban residents have a tendency to spend more on costly diseases. For instance, the compositional share average per cases medical spending of rich insured person found high on costly diseases like neurological disorders, tetanus, sexually transmitted diseases, cancer and other tumours. The spending pattern on poor insured persons however is somewhat different from the rich insured. The share of spending of poor insured is high on tuberculosis, disorders of joints and bones, gynaecological and psychiatric disorders, diseases of skin and diseases of mouth / teeth / gum (*Table 6*). This shows that the share of inpatient spending of rich insured person in most case are on high cost diseases, while poor insured person spend high on low-cost diseases. Similar to the difference in the pattern of health expenditure of rich and poor person, the share of expenditure of rural and urban residents also varies. The trends of health expenditure of urban insured person are more or less similar to the rich insured and the pattern of spending of rural insured is similar to poor insured person.

The treatments and diseases level analysis reflect that health insurance has resulted in demand as well as supply side moral hazard problem in India, which have emerged either due to over-prescription or over-utilization. Probably, both demand and supply side moral hazard problem appear to be playing equal role on account of higher on average inpatient care expenses among insured, particularly rich and urban insured, persons in India. Probably the presence of asymmetric information between principal and agent provides the opportunity for the patients, the providers and the insurers to maximize individual gain in the health care market (Reddy, *et al*, 2011). The patients have the incentive to indulge in excess demand, the providers, on the other hand, have much bigger advantage over the patients given the mystification of health care and the associated treatments. This analysis also leaves some implication for health sector that, in order to meet the increased demand of

its population, there is an urgent need to develop equipment / technology and cheaper medicine to reduce the health care spending cost in India.

Table 6
Distribution of average per cases medical expenditure during stay at hospital by nature of diseases (%)

Diseases	*Insured*					*Uninsured*				
	Rural	*Urban*	*Poorest*	*Richest*	*Total*	*Rural*	*Urban*	*Poorest*	*Richest*	*Total*
Gastro-intestinal	1.59	1.46	1.75	1.70	1.49	1.92	1.72	1.73	1.64	1.84
Heart disease	6.54	12.3	3.58	9.90	9.89	7.63	7.99	2.13	11.8	8.31
Hypertension	2.76	1.58	1.93	2.12	2.10	3.23	2.64	1.59	1.29	3.09
Respiratory ENT	3.11	1.80	1.83	2.10	2.48	2.16	2.03	1.61	2.33	2.11
Tuberculosis	1.76	1.31	2.54	1.94	1.51	3.29	7.29	1.58	0.92	4.44
Bronchial asthma	1.95	1.50	1.35	1.87	1.69	1.78	2.38	1.55	2.22	2.05
Joints and bones	4.25	5.36	6.34	4.84	4.82	4.07	5.23	4.02	5.22	4.53
Kidney / urinary	6.22	6.67	4.95	4.76	6.23	5.31	4.07	5.14	5.09	4.92
Prostatic disorders	7.12	4.87	4.34	3.72	5.90	4.87	3.36	12.8	3.66	4.33
Gynaecological	3.27	3.10	4.11	3.36	3.06	4.41	3.62	3.28	3.08	4.14
Neurological	4.08	5.70	4.87	7.54	4.59	5.28	7.84	4.34	5.25	6.27
Psychiatric	5.19	3.39	4.12	2.59	4.37	2.96	1.97	4.76	3.06	2.62
Eye ailment	1.21	2.33	1.25	2.06	1.51	1.74	1.96	1.09	1.89	1.86
Skin diseases	0.81	1.98	8.08	1.88	1.24	3.88	1.71	2.44	1.88	3.08
Goitre	4.41	1.28	1.58	1.53	2.70	2.48	1.15	3.53	1.28	1.86
Diabetes mellitus	2.33	2.87	2.88	2.38	2.68	3.40	3.05	0.90	2.14	3.34
Under-nutrition	1.92	1.07	3.38	0.95	1.55	1.84	2.53	4.40	0.00	2.21
Anaemia	2.64	1.47	3.10	2.20	2.16	2.51	1.58	3.86	1.08	2.15
STD	5.45	1.50	2.37	3.49	3.60	3.71	3.28	4.14	5.65	3.40
Febrile illnesses	1.29	1.20	1.47	1.32	1.20	1.48	1.52	1.08	1.13	1.50
Tetanus	4.93	14.4	2.59	9.19	10.9	2.51	3.81	2.20	10.7	2.69
Filariasis	0.95	0.91	2.19	1.46	0.98	2.72	1.43	0.24	1.41	2.28
Disabilities	3.29	4.99	3.43	4.79	3.60	3.61	4.58	1.63	4.56	3.76
Mouth Teeth Gum	2.54	0.46	5.22	1.58	1.60	4.70	3.23	10.6	1.43	4.18
Accidents related	3.83	3.98	4.33	4.20	3.72	5.26	4.55	3.20	3.74	5.01
Cancer & tumours	11.5	7.74	10.4	11.2	9.54	7.29	10.3	10.3	12.8	8.30
Other diagnosed ailments	3.09	2.97	3.22	3.41	2.96	3.23	3.32	3.14	3.12	3.28
Undiagnosed ailments	2.01	1.82	2.77	1.86	1.84	2.75	1.88	2.68	1.55	2.44
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

Source: same as Table 5.

8. Financing Healthcare through Health Insurance Intervention

8.1 Source of Healthcare Financing: General Trends

In general, the NSS 60th round reported four major sources of health care finance of household namely; own saving / income, borrowing, contribution from friends and relatives, sale of ornaments / physical asset / animal etc. Of which, financing health expenditure from own source of income / saving is considered to be one of the best indicators. Financing health expenditure through borrowing and / or sale of asset / ornaments / animals on the other hand leads to over burden and frustration on households. An overview of the average per capita compositional distribution of source of finance reveals that around 48 per cent funds are managed from own income / saving for inpatient care. Whereas, for outpatient care, around 80 per cent health expenditure is financed from own source of income / saving. This reveals that financing health care expenditure for inpatient care is a major challenge in India where about 52 per cent funds are managed from off saving / income sources. A dominant share (about 33%) of inpatient spending is financed through borrowings (*Table 7*).

Table 7
Compositional share of different source of healthcare finances

	Inpatient			*Outpatient*		
	Rural	*Urban*	*Total*	*Rural*	*Urban*	*Total*
Income & Saving	41.88	58.14	48.48	77.26	86.45	80.29
Borrowing	40.39	22.28	33.03	17.06	7.22	13.89
Friends / Relatives contributions	12.81	12.02	12.49	4.23	4.84	4.43
Sale of asset & animal etc	4.92	7.57	5.99	1.39	1.49	1.42
Total	**100**	**100**	**100**	**100**	**100**	**100**

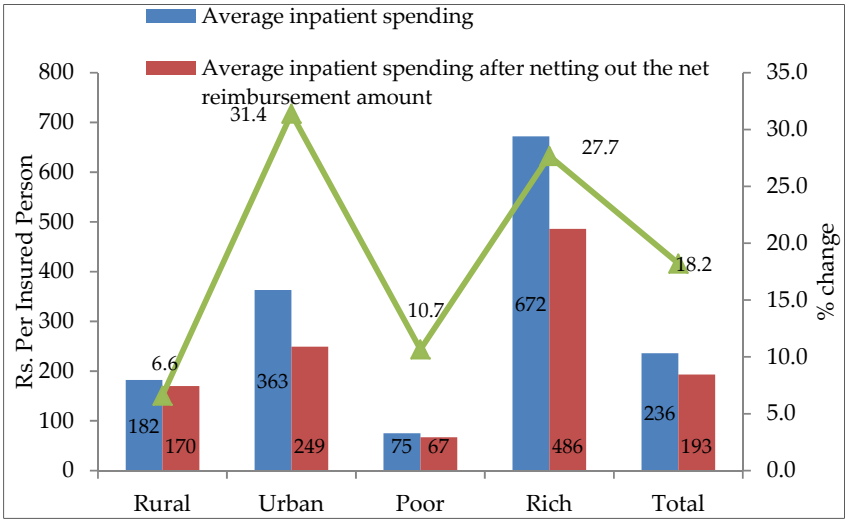
Source: Unit level records of NSS 60th round

The contribution share of different source of finances for inpatient care varies considerably across rural-urban resident in India. In urban India, a major share (about 58%) of inpatient spending is financed from own income / saving. The contribution share of own income / saving in rural India however is low around 42 per cent. The rural people therefore have to finance health expenditure from other source of finance compare to the urban people. For instance, compositional share of borrowing in financing inpatient care expenditure is around 40 per cent compare to 22 per cent in urban. The share of borrowing and income constitute around equal and high share in financing the inpatient care expenditure in rural India. The share of borrowing to finance outpatient care expenditure is also high (around 17%) in rural India compare to around 7 per cent in urban. This reflects that the burden of borrowing comparatively high on rural Indians (*Table 7*).

8.2 Financing Inpatient Spending and Reducing Burden of Borrowing

To the what extent, intervention of health insurance has helped in providing the financial protection in reducing burden of borrowing and overall health expenditure is analyzed by comparing the inpatient care spending and borrowing of insured person with uninsured by netting out the amount of reimbursement that they receive. The results show that after netting out the net amount of reimbursement (total reimbursement received minus total premium paid) from total health expenditure, the health expenditure of insured person for inpatient care reduced about 18 per cent (*Figure 6*). It is interesting to know, to whom health insurance provide better financial protection, to needy poor people or to affluent section of the society. The results show that this reduction turns noticeably high among rich (expenditure reduced about 28%) and urban (expenditure reduced about 31%) residents of India. The amount of reduction in health expenditure remained low in case of poor (with about 11% reduction) and rural (with about 7% reduction) residents.

Figure 6
Role of health insurance in reducing inpatient spending



Source: Unit level records of NSS 60th round

The inpatient care expenditure of insured person, before netting out the amount of net reimbursement, recorded higher than the uninsured. Interestingly, this spending became lower after netting out the net reimbursement amount than uninsured spending. The reduction remained noticeable across poor, middle and upper middle and rich person and rural-urban residents (*Figure 6*). But, the reduction remained more noticeable among urban / rich residents compare to rural / poor. Similarly, the amount of borrowing per hospitalized insured person recorded lower than the uninsured after netting out the net reimbursement amount from total borrowing. The borrowing components of insured person reduced around 45.9 per cent due to reimbursement (*Table 8*). The reduction in borrowing however remained high among richer and urban residents compare to their counterparts. This indicates that

intervention of health insurance in India in that sense is emerged a way to provides the financial protection to insurance policy holders. But, the benefit or access to health insurance seems to be more prevalent among the affluent section of the society, as they consume the major share of reimbursement, compare to the poor and middle income groups of India.

Table 8
Role of health insurance in reducing burden of borrowing from insured persons for inpatient care (Rupees per hospitalization cases)

	Borrowing Status (BS) of Insured			*Borrowing Status of Uninsured Persons*
	Borrowing status	*BS after netting out the net reimbursement amount*	*Per cent Change*	
Poor	2287	1884	17.62	2038
Second Poor	2616	2356	9.92	2375
Middle	2995	2766	7.64	2417
Second Rich	3512	2515	28.39	2918
Rich	3714	-709	119.08	2403
Total	**3075**	**1661**	**45.99**	**2439**

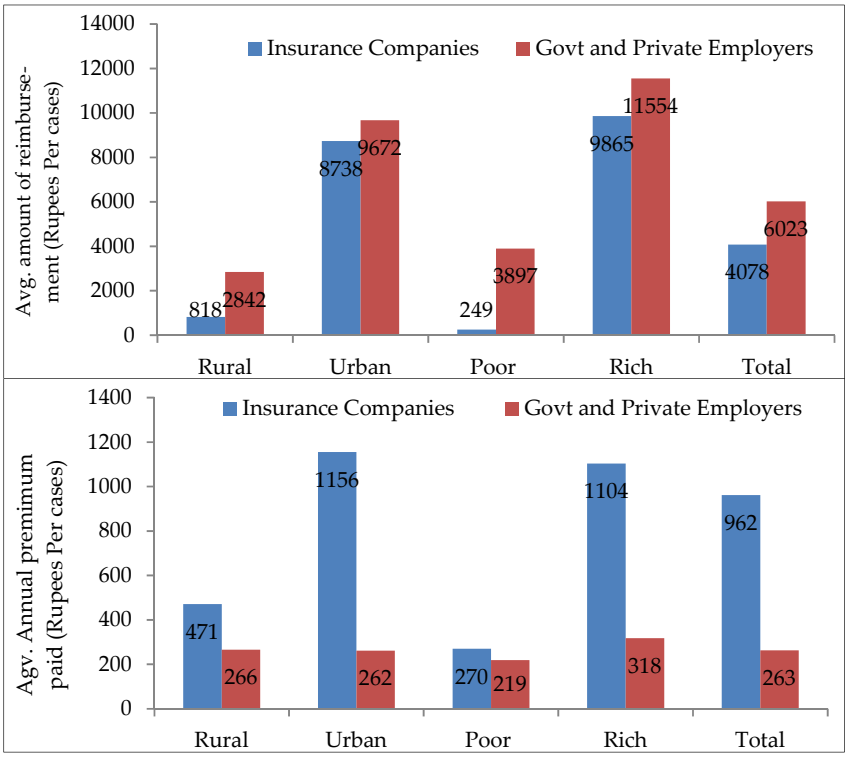
Source: Unit Level Records of NSS 60th Round

8.3 Relative Role of Insurers in Financing Healthcare

In India, there are different health insurance models that provide financial protection to insured during health emergency. Generally, the health insurance policy holders pay an amount of premium (either to employers (public / private) or medical and general insurance companies) and get health expenditure financing facilities through reimbursement. The role of these insurers in financing health expenditure varies considerably, particularly in making reimbursement and receiving premium across rural-urban residents and poor-rich population. For instance, both insurance companies as well as employers made high average per cases amount of reimbursement to rich and urban residents of India. The average per cases amount of reimbursement made to rural and poor people is comparatively very low. As far as the relative role of insurance companies and employers in financing the health expenditure through reimbursement is concerned, the employer insurers have made high, per cases on average, reimbursement compare to insurance companies to all stakeholders like poor, rich, rural and urban residents.

Interestingly, the financial protection provided by insurance companies through reimbursement however is very low than the employer reimbursement but the amount of premium that they receive / collect from insured person is comparatively higher (on average about ₹962 per cases) than the employer (on average about ₹263 per cases) insurer (*Figure 7*). These insurance companies collect high, on average, amount of premium from urban residents and richer persons compare to rural and poor. While, the employers insurers receive almost, on average, equal amount of premium from each of these stakeholders.

Figure 7
Average amount of reimbursement made and premium received by insurers for inpatient care: 2004-05



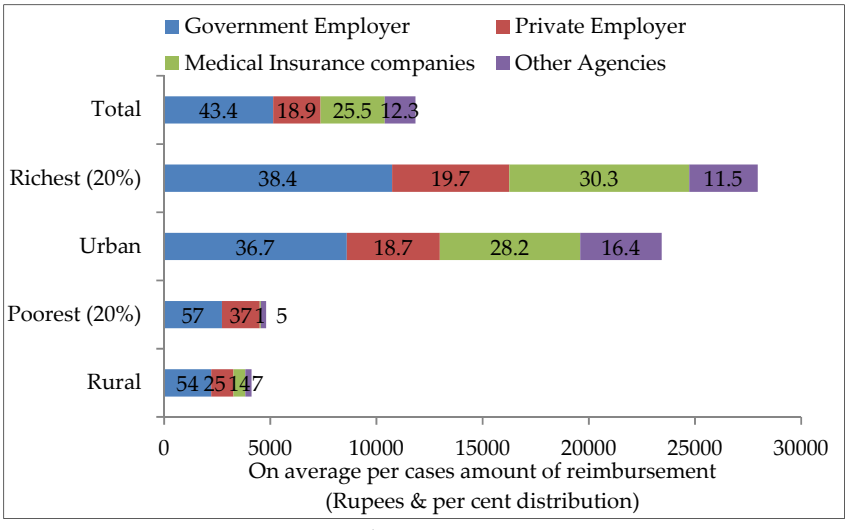
Source: Unit level records of NSS 60th round

One corollary is that the private health insurance companies generally receive a significantly high amount of premium from insurance policy holders but financial protection provided by them through reimbursement is very low, and significantly lower than the reimbursement maid by employer (government / private) insurers. This corollary of receiving high funds from policy holder and making low reimbursement can be justify with the arguments that the aim of these private insurance companies probably is not to increase the access to health care and provide the financial protection during health emergency but their prime objective is to make profit from insurance business. With the recent steps of the government of India to increase in the cap of foreign direct investment (FDI) in health insurance from 26 per cent to 49 per cent, the private health insurance market in providing better service and health access expected to grow. But how this will help in providing the financial protection to poor and rural Indian residents remained a challenge.

A disaggregated analysis of the share of contribution of insurers (i.e., government and private employer, medical insurance company and other agencies) in providing financial protection through reimbursement shows that the share of per cases reimbursement of government

employer constituted around 43 per cent. Followed by, medical insurance companies constituted around 25.5 per cent share, private employer around 18.9 per cent and other agencies about 12.3 per cent respectively (*Figure 8*). The government employers and medical insurance companies made high share of reimbursement to rich and urban residents followed by private employers and other insurance agencies. The poor and rural people get low on average amount of reimbursement, but the government employer provide more reimbursement compare to the private employers and other medical health insurance agencies / companies to poor and rural. The per cases share of reimbursement of government employer recorded around 57 per cent for poorest and 54 per cent for rural residents. The share of contribution of medical insurance companies in making reimbursement constituted around 30.0 per cent for rich and 28.2 per cent for urban resident, however this share is only around 1.1 per cent for poor and 13.6 per cent for rural resident. Thus, poor and rural residents are more benefit from the employers (government or private), whereas the rich and urban residents not only benefited from employer but also from other medical or other insurance company.

Figure 8
Share of contribution of insurers in making reimbursement: 2004-05



Source: Unit level records of NSS 60th round

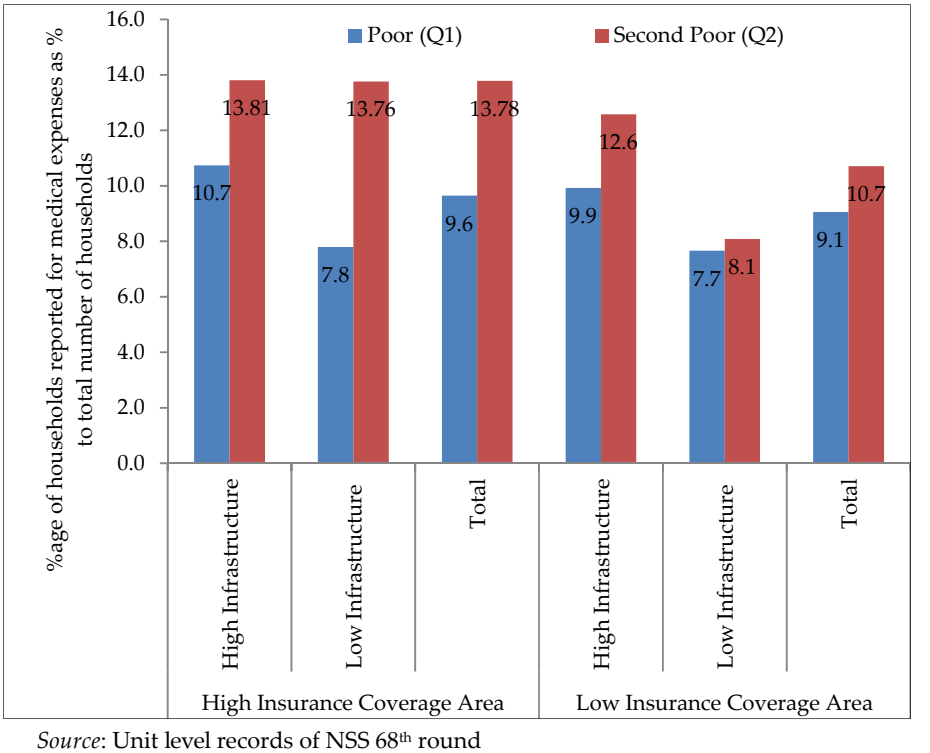
9. Health Insurance and Provider Networks Nexus

As discussed in methodological section, there are different schools of thought that have argued about the nexus between health insurance and healthcare provider network. One argument lies with the argument that if provider networks are uneven and low, the less the estimated effects of health insurance are likely to be. On the contrary, other pro-health insurance school of thought argues that covering population under health insurance will encourage them to seek more care / demand and consequently help in developing the private

(as well as public) healthcare provider network in the country. How this phenomenon is working in Indian scenario is examined in this section. Examining such association however is not straightforward. To understand the first line of thought, first we tried to understand the tendency of healthcare utilization of insured person both in area where the availability of health infrastructure is high and area where availability of health infrastructure is low.

The results show that insured population living in high healthcare provider networks area registered high access to health care use compare to those living in low provider networks area (*Figure 9*). The access to health care use is measured by identifying the percentage of households that have reported 365 days medical (institutional) expenditure, as per cent to total number of households in the sample area using most recent (2011-12) NSS round data. In high health insurance coverage area households have high access to health care use in high infrastructure area than low infrastructure households. That is, about 15.5 per cent and 14.7 per cent households have reported for hospitalization in high and low health infrastructure area respectively. As discussed above, the 68th round is used to evaluate the impact of RSBY and other state run health insurance schemes on poorer segment of the society. The results show that the poorest segment of the society either having high insurance coverage or low insurance coverage have less access to health care use if health infrastructure is low compare

Figure 9
Access to healthcare use: Relative role of health insurance and provider network



Source: Unit level records of NSS 68th round

to the high infrastructure. Interestingly, in case if country equips the poor people with both health insurance as well as infrastructure the likely impact are even better.

However, the likely impacts of both of these instruments are higher on second poor than the poorest (*Figure 9*). It emerges from the analysis that weak service delivery system, in term of low availability of health facilities, may diminish the likely impact of health insurance, like the publically financed insurance schemes, on access to healthcare use in India. The results suggest that to reap the expected impact of health insurance, on poorer, an appropriate and adequate healthcare provider networks needs to be developed across states / regions and remote areas of India.

To understand whether health insurance coverage leads to development of provider, particularly the private, network in the country, the study first has examined the (i) tendency of insured person to utilize different facilities (like public or private); (ii) if in any case status of utilization from public facility low, then reason for not taking treatment from public facilities and (iii) does health infrastructure (existing position) is a function of percentage of population coverage health insurance in a state, controlling for level of development of the state (measured through Per Capita Gross State Domestic Product-PCGSDP). Such association will give us an idea whether development of private healthcare market can be a function or depends on increase in the number of health policy holders and / or economic development of the states / persons.

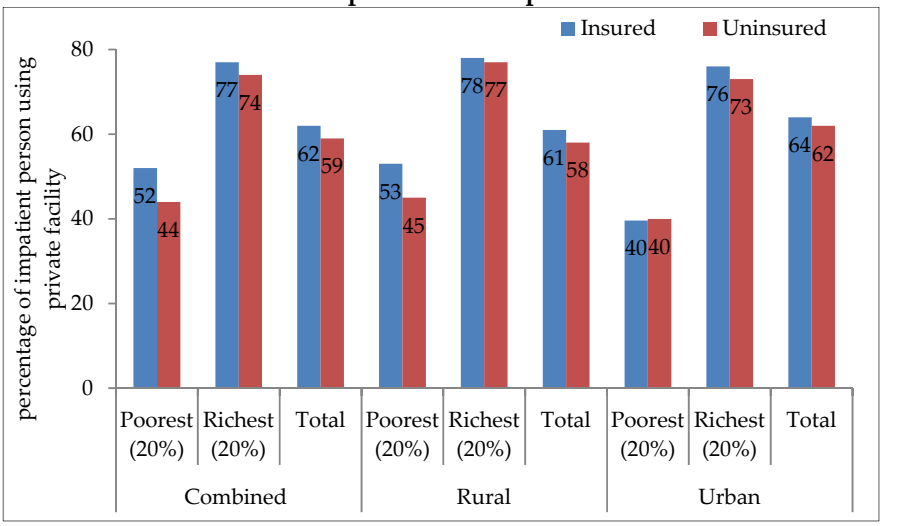
The results show that insured persons have high tendency to utilize private facilities than the uninsured across rich, poor, rural and urban persons (*Figure 10*). This indicates that the demand for private healthcare providers increases with the increase in the number of population under health insurance or coverage of insurance policy holders. One reason of high utilization of private healthcare facilities amongst the insured person is related to the quality and adequacy of care. The public (basic) health facilities seem to be inadequate to service the population in the country[4]. On the other hand the private facilities are considered costly but comparatively qualitative. But these costly private health facilities in most cases either are utilized / accessed by richer / urban and / or people those having financial protection through health insurance, as insurance increase the ability to pay of policy holders.

An analysis from NSS 60th round also shows the reasons for not availing public facilities like Government doctor / facility too far, not satisfied with medical treatment by government doctor / facility, long waiting, required specific services with government facility is not available and others are related with quality and inadequacy of care. For instance, around 52 per cent insured persons are not satisfied with medical treatment provided by government

[4] Indian public healthcare market is considered to be inadequate to meet the population need with low level of quality. The country has not only low availability (or shortfall), as per the requirement, of basic health infrastructure but also failing in achieving the IPHS standard health facilities in the country (Reddy, *et al*, 2011a).

doctor / facilities, relating to the issues of quality of care. This percentage however is about 45 per cent among uninsured person. Similarly, around 15.4 per cent insured person says there is long waiting (associated with inadequacy of care) in government facility as against the 11 per cent by uninsured (*Table 9*). The access to health care use of insured rich, poor, rural and urban person is high from private facility allow us to argue that with the increase in population under the health insurance, the probability of access to utilize private facility will increase. That is, health insurance indirectly generates demand for private provider and further help in expending the private providers market in the country. This however provides some clue for development of private provider network, but the argument cannot be generalized. For instance, the association between health insurance coverage and health

Figure 10
Tendency of health utilization of insured and uninsured from private healthcare providers for inpatient care



Source: Unit level records of NSS 60th round

Table 9
Reasons for not taking treatment from government facilities: The issue of quality of care

	Insured					*Uninsured*				
	Q1	*Q5*	*R*	*U*	*Total*	*Q1*	*Q5*	*R*	*U*	*Total*
Facility too far	25.7	9.9	18.7	12.3	16.2	29.2	16.4	24.9	15.3	21.9
Unsatisfactory treatment	47.9	50.3	53.8	50.2	52.4	39.3	47.7	44.4	47.5	45.4
Long waiting	10.4	18.8	12.6	19.9	15.4	6.8	15.3	8.7	16.5	11.0
Required services not available	4.9	5.6	6.1	2.6	4.7	5.3	5.3	5.9	4.4	5.4
Others	11.1	15.5	8.8	15.1	11.3	19.4	15.2	16.1	16.3	16.2

Source: Unit level records of NSS 60th round

infrastructure, controlling for level of development of the state, shows that the relationship is positive but insignificant with low correlation coefficient value (*Table 10*). Therefore, covering population under health insurance (either under RSBY or state run or private health insurance) however can be a good step for achieving universal health coverage targets in the country, but the outcomes in most case will depends how extensively the health facilities are in the country across the board.

Table 10
Correlation between health insurance coverage, health infrastructure and economic status: Association at state level

	Mean Value of Health infrastructure Index (A)	*% of Persons having Health Insurance Policy out of Total Sampled Persons in India: NSS 60th Round (B)*	*Real PCGSDP: 2004-05 (C)*
A	1		
B	0.06	1	
C	0.06	0.14	1

Source: Author's Estimates

10. Conclusion and Discussion

In India, different type of health insurance models are exist which are aimed to improve access to health and provide the financial protection during health emergency. How far these insurance models have helped in achieving the stated goal is evaluated in the present study. The study finds that health insurance increases the access to health care use with greater equity but the likely impacts on the poorer segment of the society are very low and limited. It reflects that insured persons have a tendency to switch to costlier cares. Health insurance appears to encourage people to seek costly cares / diseases and more care from the expensive tertiary care providers, sidetracking preventive and primary care providers' services. Thus, health insurance rather than reducing the health care cost it has resulted in increase the cost per inpatient episode of care in India. The tendency of increase in inpatient care health spending is more noticeable among richest and urban people compare to their counterparts. A similar kind of assessments is emerged from literatures that have reflected that the outpatient and inpatient expenses of the household have gone up considerable in post-insurance period (Wagstaff & Lindelow, 2008; Wagstaff, *et al* 2009). Thus, health insurance may or may not always increase financial protection and reduce overall catastrophic costs.

The analysis of access to healthcare reflects that health insurance has resulted in both demand as well as supply induced moral hazard problem in India. Moral hazard problem (demand-side) is nothing but relates with the likely behaviour changes of users. This occurs when insured demand excess treatment or over utilizes facilities. Moral hazard may also encourage an insured person to incur less on preventive care and leading to high-cost as well as tertiary care treatment and some time in excess of what is medically considered an optimal treatment. The last one relates with supply side moral hazard emerged due to over-provision or over

prescribe medical care. This emerges because providers indulging in providing unnecessary and expensive care. In other cases it may lead to increase in the level of inappropriate care, unnecessary treatment, excessive laboratory tests or overcharging. A treatment seeking behaviour for inpatient and outpatient cares shows that rate of reporting for outpatient (preventive) care of insured person is comparatively very low than the uninsured, while their rate of reporting for inpatient care is very high. This may be because the benefits of health insurance in India in most cases met the hospitalization expenses but have limited role in providing financial protection for outpatient expenses. Therefore, the inpatient expenses of insured person gone up than that uninsured but at the same time outpatient expenses remained low. The limited role of health insurance, up to financing inpatient care spending, probably leads to generate demand side moral hazard problem. This calls to introduce a more comprehensive health insurance scheme, covering both inpatient and outpatient expenses, in India.

A disease level and treatments seeking behavioural analysis shows that the insured person have a tendency to access more medical care treatments like specialist / doctors, diagnostics tests, bed and hospital stay and costly diseases like the heart, kidney / urinary system, cancer, tumour, sexually transmitted diseases, genealogical disorder etc. compared to the uninsured. This reflects the prevalence of both demand as well as supply side moral hazard problem, emerged due to over-prescription and over-utilization. This appears to be playing equal role on account of higher on average inpatient care expenses among insured person in India. The moral hazard problem seems to be more prevalent among urban residents and richest insured persons but little impact on rural, poorer and near poor. Probably the presence of asymmetric information between principal and agent provides the opportunity for the patients, the providers and the insurers to maximize individual gain in the health care market. The patients have the incentive to indulge in excess demand, the providers, on the other hand, have much bigger advantage over the patients given the mystification of health care and the associated treatments.

On the arguments, which way, tax-financing or health insurance or mix, to go, the study finds that the expected results of the impact of health insurance are effective if provider networks fairly extensive spreading across region and in failure of which the likely impact to be much thinner. The more that provider networks are uneven and low, the less the estimated effect of health insurance are likely to be. An analysis of status of utilization of insured persons for inpatient care in low and high provider networks (measured through health infrastructure index) areas shows that insured person living in high provider networks area have high access to use compare to those living in low provider networks area. The likely impacts on poor insured persons bit visible but not for rural residents. In rural area there are few qualified private providers and the conditions of public health facilities are generally not up to the mark therefore the likely impacts of health insurance could not be materialized. Their expected impacts however are high in urban India where qualified human resources and physical infrastructure are easily available. This reflects that low / weak provider networks can limit the likely impact of health insurance on access to health care in India.

However, there are some clues that show health insurance strategy can be one of the way to achieve universal health coverage in the country. The analysis shows that as the number of population coverage under health insurance increase the demand for private providers' increases. Thus, health insurance provides an opportunity for private providers to grow. But, the results of the functional association between provider networks and health insurance coverage turned weak. The result shows that the likely impact of health insurance, particularly on poorer segment of the society and people living in remote rural area, can only be materialized in condition when adequate public (along with private) provider networks is in place. Thus, to achieve universal health coverage, country needs to provide the adequate service networks across states / regions and in remote areas. Failing which likely impact of health insurance may be little.

The role of health insurance in providing the financial protection to different segments of the society differs significantly. The analysis shows that health insurance has helped in reducing the inpatient spending and burden of borrowing from households. The average inpatient spending and burden of borrowing of insured persons after netting out the net reimbursement (netting out the premium from reimbursement) amount registered lower than spending and borrowing amount of uninsured persons. While their average inpatient spending and borrowing amount was higher than uninsured before netting out the reimbursement amount. The net reimbursement facility has helped in reducing about 18 per cent of inpatient spending and by about 45 per cent borrowing burden from insured persons at aggregate level. The affluent section of the society and urban insured persons however getting more benefit, while rural and poor insured person more or less found unable to reap the likely financial protection benefit, for which country concerned more.

The role of different health insurers (CGHS, ESIS, medical insurance companies and other private insurers) vary considerably in providing such financial protection across different population sub-groups (rich-poor) and regions (rural-urban). The results show that medical insurance companies as well as employer insurers provide on average high reimbursement amount to the rich and urban insured residents, while average per cases amount of reimbursement made to rural and poor insured person registered very low. Of these two, the employer insurers provide high on average reimbursement compare to insurance companies to all stakeholders like poor, rich, rural and urban residents. Though, the average amount of reimbursement made by insurance companies is low but their average amount of premium received / collected from insured person is very high than the employer insurers. It also reveals that private / medical health insurance companies in India have not been good at pooling financial risk to the poor and rural residents. Paying high premium and receiving low reimbursement probably is the result of low awareness about insurance benefits that people can receive and have kept, particularly the poor, out of the pool to get adequate benefit.

Under the current policy discourse, the private insurance is expected to play a greater role in health insurance market. For instance, India's total health insurance premium expected to grow with 20 per cent compound annual growth rate and is likely to reach ₹32,038 crore by

2016-17. The likely benefit of such growth would be high for private insurers as in India about 65 per cent of people covered by private health insurance companies (ASSOCHAM, 2013). But, the corollary of getting high premium and making low reimbursement by these medical / private insurance companies, leave some implications, particularly for Insurance Regulatory Development Authority (IRDA) relating to the urgent need of proper regulation of existing India's health insurance market. There is also a need to develop an appropriate road map and strategy for emerging, due to increase in FDI cap in health insurance from 26 per cent to 49 per cent in 2013, private health insurance market in India to ensure the likely impact of health insurance on access to and financing of healthcare, particularly on poorer segment of the society.

Policy makers in India hope that introducing or scaling up health insurance, the health and well-being of citizens will be enhanced. But the designing of health insurance interventions seems to be inadequate, as the likely and expected impact of health insurance on Indian poor / rural population have not been materialized yet. The likely impacts of recently initiated publically financed health insurance (the RSBY) scheme—a pro-poor financing strategy, are also not so convincing in ensuring access to health care and financial protection to the poor Indian. It felts that there is much more to be done on this topic focussing on to regulation of private providers and insurers, effective implementation of existing and newly initiated health insurance schemes, and people awareness about the service benefit and impact of health insurance on financial protection as well as on services providers' networks. Furthermore, much more to be done to assess cost-effectiveness of health insurance models compared with other interventions like tax-financed systems to achieve universal health coverage and equity in access to healthcare in India.

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Appendix 1

Government sponsored health insurance schemes in India: A summary of salient characteristics-2010

Scheme name *Launch year*	*ESIS* *1952*	*CGHS* *1954*	*Yeshasvini* *2003*	*Aarogyasri* *2007*	*RSBY* *2008*	*Kalaignar's* *2009*	*V. Arogyashri* *2009*	*RSBY Plus* *2010*	*ASBY* *2011–12*[a]
Geographical area	Pan India in notified areas	Pan India, 25 cities	Entire state of Karnataka	Entire state of Andhra Pradesh	Pan India: Currently implemented in 25 states	Entire state of Tamil Nadu	Gulbarga Division of Karnataka	Entire state of Himachal Pradesh	Entire territory of Delhi
Target / eligible population	Private formal sector	Employees and pensioners of central govt. and certain other groups	Members of the rural cooperative societies (both above and below the poverty line)	BPL or annual family income below ₹75,000	BPL families and other targeted groups	BPL; annual family income below ₹72,000; members of 26 welfare boards	BPL residing in covered areas	Enrollees in HP under RSBY	Enrollees in Delhi under RSBY
Number of beneficiaries	55.4 million	3 million	3 million	20.4 million families, 70 million beneficiaries	23.4 million families, 70 million beneficiaries	13.4 million families, 36 million beneficiaries	1.5 million Families, 7.5 million beneficiaries	0.24 million families, 0.8 million beneficiaries	0.65 million families (proposed)
Unit of enrolment	Family	Family	Individual	Family	Family	Family	Family	Family	Family
Benefits package	Comprehensive	Comprehensive	Inpatient, surgical secondary focus; covers more than 1,200 notified surgeries	Inpatient, tertiary focus; 938 identified procedures and follow-up packages covered	Inpatient lower-cost, secondary care focus; maternity also covered	Inpatient tertiary focus; more than 400 identified hospitalization procedures covered	Inpatient tertiary focus; 402 packages and 50 follow-up packages covered	Inpatient tertiary focus; 326 defined Procedures above RSBY covered	Inpatient tertiary focus; defined procedures over and above RSBY covered

Scheme name *Launch year*	*ESIS* *1952*	*CGHS* *1954*	*Yeshasvini* *2003*	*Aarogyasri* *2007*	*RSBY* *2008*	*Kalaignar's* *2009*	*V. Arogyashri* *2009*	*RSBY Plus* *2010*	*ASBY* *2011–12*[a]
Maximum insurance coverage	No limit	No limit	₹2,00,000 per person per year	₹1,50,000 per family per year plus buffer of ₹50,000 per year	₹30,000 per family per year	₹1,00,000 over four years, per family	₹1,50,000 per family per year plus ₹50,000 per year buffer	₹1,75,000 beyond the ₹30,000 covered by RSBY	₹1,50,000 per family per year
Hospital empanelment, minimum beds	As per CGHS criteria (see next column)	100 beds in metropolitan cities; 50 beds in others	50 inpatient beds and 3 intensive care unit (ICU) beds	50 beds	10 beds	30 beds	50 beds	50 beds	50 inpatient beds
Number of empanelled hospitals (govt. and private)	148 own plus about 400 private hospitals	562 private hospitals (and can use any public hospital)	543 hospitals (including 30 public hospitals)	241 private and 97 govt. hospitals	8,111 hospitals (5,604 private and 2,507 public)	692 hospitals (including 56 public hospitals)	94 hospitals (86 private and 8 public)	16 hospitals	—
Sources of funds	Contribution, per cent of wages (employees 1.75%, employers 4.75%)	Central govt. budget, employee contribution based on salary	Contributions (beneficiaries 58%), (state govt. 42%)	State govt. (100%, through the health budget and through a levy on alcohol sales in the state)	Central govt. 75%, State govt. 25 %, but in some states, it is 90% from center plus ₹30 from beneficiary	State govt. (100%)	State govt. (100%)	State Govt. (100%)	State govt. (100%)

Scheme name *Launch year*	*ESIS* *1952*	*CGHS* *1954*	*Yeshasvini* *2003*	*Aarogyasri* *2007*	*RSBY* *2008*	*Kalaignar's* *2009*	*V. Arogyashri* *2009*	*RSBY Plus* *2010*	*ASBY* *2011–12*[a]
Total expenditure, 2009–10 (millions of rupees)	₹19,900	₹16,000	₹550	₹12,000	₹3,500	₹5,170	None. Claim expenditure Commenced in 2010–11	None. March 1, 2010 to February 15, 2011, ₹85.6	Estimated budget for first year: ₹400 to 600
Premium price, 2009–10	Contribution, per cent of wages (employees 1.75%, employers 4.75%)	Contribution varies between ₹50 and ₹500 per employee per month. Balance paid by govt.	₹120 per person per year; increased to ₹150 per person per year in 2010–11	₹439 per family (varies between phases and districts)	Average: ₹540 per family per year including service tax	₹469 per family per year plus service tax	—	₹364 per family per year including service tax	—
Number of hospitalizations per year	417,498 2009–10	—	66,749, 2009–10	3,19,446, 2009–10	4,00,000, 2009–10	1,84,044, first year	3,738, until November 15, 2010	241 (March 2010 to February 2011)	—
Hospitalization frequency	0.75 per cent per member per year	—	2.23 per cent per beneficiary	0.6 per cent per beneficiary	2.5 per cent per beneficiary	0.5 per cent (annualized)	—	0.10 per cent (in 11.5 months) per family	—
Governing agency / legal status	ESIC / autonomous corporation	MOHFW / GOI	Yeshasvini Co-operative Farmers Health Care Trust / autonomous	Aarogyasri Healthcare Trust / trust	State nodal agency / insurance company	TN Health Systems Society / autonomous society	Suvarna Arogya Suraksha Trust / autonomous trust	HP Swasthya Bima Yojana Society / autonomous society	Apka Swasthya Bima Yojana trust / autonomous trust

Scheme name *Launch year*	*ESIS* *1952*	*CGHS* *1954*	*Yeshasvini* *2003*	*Aarogyasri* *2007*	*RSBY* *2008*	*Kalaignar's* *2009*	*V. Arogyashri* *2009*	*RSBY Plus* *2010*	*ASBY* *2011–12*[a]
Executing agency	ESIC and state ESIS departments	Same as governing agency	TPA	Trust and insurance company	State nodal agency and insurance company	insurance company	Licensed TPA	State health department and contractual staff	Insurance companies and TPAs

Note: Employees' State Insurance Scheme (ESIS); Central Government Health Scheme (CGHS); Yeshasvini Co-operative Farmers Health-care Scheme (Karnataka); Rajiv Aarogyasri Community Health Insurance Scheme (AP); Rashtriya Swasthya Bima Yojana, RSBY (GOI / MOLE); Chief Minister Kalaignar's Insurance Schemea (TN); Vajpayee Arogyashri Scheme (Karnataka); RSBY Plus (HP); Apka Swasthya Bima Yojanab (Delhi); — = not available.

a. In 2011–12, the scheme was modified to include additional procedures and relaunched as the Chief Minister's Comprehensive Health Insurance Scheme, and the executing agency serving the scheme also changed. The maximum coverage was also changed from ₹1,00,000 floating over four years to ₹1,00,000 per year. Hereafter, this write-up reflects the scheme details that existed when this study was undertaken, in 2010–11.

b. ASBY was on the drawing board when this study began. The expected launch in 2011–12 had not yet happened when this book went to press.

Source: Gerard La Forgia and Somial Nagpal, 2012.

Appendix 2
Implementation status of health insurance in Indian states

States	*% of Insured Persons:2004-05#*			*RSBY Implementation Status: 2012-13##*					
	Rural	*Urban*	*Total*	*Total targeted families (No. in 000)*	*Total family enrol (No. in 000)*	*Ratio: enrol to target*	*CV (%) across district*	*Total no. of district*	*District with >=49% RSBY enrolment*
J&K	6.33	0.59	5.26	66	36	53.8	NA	22	1
H. P.	4.30	1.61	4.04	555	388	69.9	14.3	12	12
Punjab	2.60	5.52	3.56	454	210	46.3	21.5	22	8
Chandigarh	30.55	2.88	6.30	10	5	50.8	NA	1	-
Uttaranchal	1.96	0.13	1.57	746	285	38.1	18.0	13	1
Haryana	9.42	3.59	7.96	1264	457	36.2	30.9	21	4
Delhi	6.50	8.48	8.17	988	0	0.0	NA	9	0
Rajasthan	83.99	85.57	84.32	3122	1023	32.8	20.0	33	6
Uttar Pradesh	1.78	2.11	1.85	11074	4848	43.8	24.9	75	31
Bihar	4.29	0.08	3.84	13112	7110	54.2	20.6	38	29
Sikkim	15.45	0.43	13.49	NA	NA	NA	NA	4	-
Arun. P.	0.43	0.60	0.45	90	40	43.9	47.1	16	4
Nagaland	0.87	0.32	0.67	396	140	35.3	55.4	11	6
Manipur	0.11	2.49	0.78	111	63	56.3	25.6	9	3
Mizoram	0.00	0.00	0.00	222	104	46.7	29.8	8	1
Tripura	4.75	0.25	4.13	787	506	64.3	10.2	7	7
Meghalaya	0.48	11.76	1.93	487	194	39.9	36.4	11	0
Assam	1.68	0.95	1.61	2347	1080	46.0	61.9	27	3
West Bengal	6.28	14.90	8.35	9222	5374	58.3	32.1	19	14
Jharkhand	38.21	26.58	36.27	3334	1504	45.1	38.4	24	16
Orissa	5.99	19.55	7.60	5534	3638	65.7	15.2	30	26
Chhattisgarh	2.33	5.43	2.76	5965	2710	45.4	38.2	26	18
M. P.	2.87	3.32	2.98	524	156	29.8	NA	48	2
Gujarat	91.62	91.03	91.42	4301	1805	42.0	29.0	26	9
Daman & Diu	100.0	92.82	98.00	NA	NA	NA	NA	2	-
D & N Haveli	97.95	99.92	98.16	NA	NA	NA	NA	1	-
Maharashtra	6.08	9.83	7.60	420	244	58.1	31.1	33	18
A.P.	5.16	7.12	5.70	3	2	75.5	NA	23	23
Karnataka	93.54	91.66	92.99	4077	1681	41.2	28.0	30	15
Goa	4.75	22.63	10.68	NA	NA	NA	NA	2	-
Lakshadweep	0.22	8.84	4.89	NA	NA	NA	NA	1	-
Kerala	6.82	6.01	6.61	3156	2323	73.6	17.8	14	13
Tamil Nadu	95.48	84.33	91.56	0	0	0	NA	31	31
Pondicherry	100.0	99.69	99.80	15	9	62.6	NA	4	-
A & N Islands	0.11	0.15	0.12	NA	NA	NA	NA	3	-
All-India	22.57	27.81	24.0	72382	35935	49.6		656	301

Note and Source: #- % of insured persons having health insurance policy out of total sampled persons is estimated using NSS 60th Round data; ##-retrieved from http: / / rsby.gov.in / statewise.aspx?, 2013

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157 Parental Education and Infant Mortality in India: Understanding the Regional Differences, ISID-PHFI Collaborative Research Programme, *Pradeep Kumar Choudhury*, November 2013

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* Most of the working papers are downloadable from the institute's website: http://isidev.nic.in/ or http://isid.org.in/

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The Institute for Studies in Industrial Development (ISID), successor to the Corporate Studies Group (CSG), is a national-level policy research organization in the public domain and is affiliated to the Indian Council of Social Science Research (ICSSR). Developing on the initial strength of studying India's industrial regulations, ISID has gained varied expertise in the analysis of the issues thrown up by the changing policy environment. The Institute's research and academic activities are organized under the following broad thematic areas: *Industrialization; Corporate Sector*; *Trade, Investment and Technology*; *Regulatory Mechanism*; *Employment*; *Public Health*; *Media Studies*; and *Other Issues*.

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About the PHFI

The Public Health Foundation of India (PHFI) is a public private initiative that has collaboratively evolved through consultations with multiple constituencies including Indian and international academia, state and central governments, multi & bi-lateral agencies and civil society groups. PHFI is a response to redress the limited institutional capacity in India for strengthening training, research and policy development in the area of Public Health.

Structured as an independent foundation, PHFI adopts a broad, integrative approach to public health, tailoring its endeavours to Indian conditions and bearing relevance to countries facing similar challenges and concerns. The PHFI focuses on broad dimensions of public health that encompass promotive, preventive and therapeutic services, many of which are frequently lost sight of in policy planning as well as in popular understanding.

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